AirCon

Simulate, Automate, Qualify

AirCon – Combustion Air Conditioning System

Combustion air pressure, temperature and humidity have a significant influence on an internal combustion engine's power output and exhaust emissions. To gain a good reproducibility of measuring results, and with this an increased test cell utilization, these conditions must be kept constant within narrow limits.

The combustion air conditioning system ENORISE AirCon meets this demand by controlling the combustion air temperature, pressure and humidity (option) independently of climatic and engine operating conditions.

Our Performance
Your benefits:

- Stable experimental conditions reduce test cell time
- Wheelbase enables flexible use at different test cells
- Simple operation
- Low maintenance
- Wide range of applications
- Control and regulation of the system is performed by an on-board controller
- Wide range of software interfaces: CSM, AK, EtherCat, CanRaw, ProfiBus
- Pre-defined PID parameters

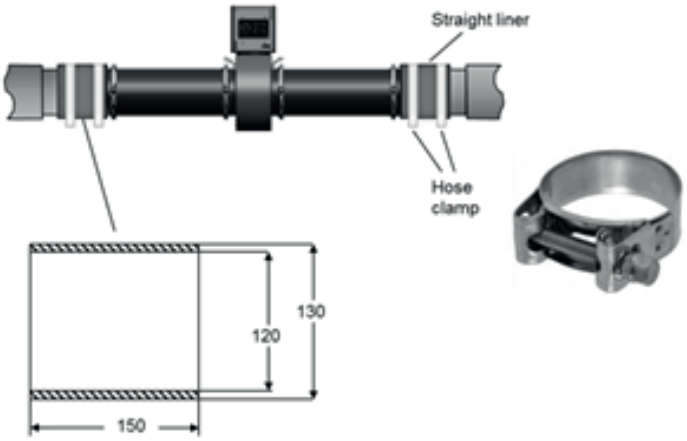
Technical Data

AirCon capacity	
Air flow	60 … 800 kg/h 120 … 1500 kg/h 150 … 2400 kg/h 180 … 3000 kg/h
Ambient Conditions	
Temperature range	10 °C… 35 °C
Max. humidity at 35 °C	40% r.H. (14 g H2O/kg air)
Min. humidity	7.5 g H_2O/kg air
Combustion air temperature	
Adjustable temperature range	20 °C … 60 °C (Cooling media 6 °C)
Temperature setting accuracy	± 1 K (AirCon outlet, under steady state conditions)
Max. stabilization time after a flow change of 75 % of max. flow; no setpoint change	< 60 s
Pressure (only AirCon -TP und - H)	
Adjustable pressure range	Ambient pressure ± 100 mbar
Pressure setting accuracy	± 1 mbar
Max. stabilization time after a flow change of 75 % of max. flow; no setpoint change	< 30 s
Humidity (only AirCon -H)	
Adjustable humidity range	8 … 12 g H2O/kg air
Humidity setting accuracy	± 3 % r. H.
Max. stabilization time after a flow change of 75 % of max. flow; no setpoint change	< 120 s
Engine Adaption	
Max. length of intake air course	10 m
Dimensions (depending on AirCon capacity)	
Length	1500 mm to 3600 mm
Width	855 mm to 1000 mm
Height	1920 mm to 2005 mm
Weight	approx. 1000 kg to 2800 kg
Media supply and interfaces	
Electrical power supply 400 V/50 Hz (480 V/60 HZ option)	up to 108 kW
Chilled water supply 6/12 °C (40 % Glycol/60 % Water)	approx. 1.7 … 30 m^3/h
Water supply for humidity control demineralized water	10 … 40 kg/h
Compressed air	100 l/min at 6 bar; dry and free of oil
Remote interfaces	CSM (TCP IP), AK (TCP IP), EtherCat, CanRaw, ProfiBus

Option I: Assembly Kit with Straight Collars for AirRate DN100 / DN150 / DN200

Straight liners and hose clamps for installing AirRate in line with a pipe.

Technical specifications



Inner diameter	DN100: 120 mm DN150: 150 mm DN200: 190 mm
Length	150...200 mm (depending on diameter reduction)
Material	Polyester Reinforced Silicone
Wall	5...6 mm
Temperature Range	-20 °C to +70 °C
Max. working pressure	1.5 bar

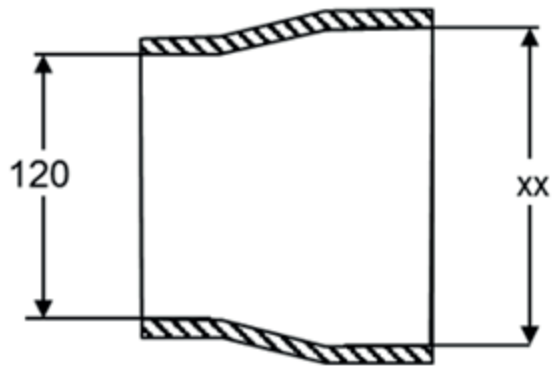
Scope of supply of assembly kit:

- 2 x Straight collars
- 4 x Hose clamps

Option II: Assembly Kit with Reduced Collars for AirRate DN100 / DN150 / DN200

Reducing collars and hose clamps for installing AirRate in line with a pipe with a different diameter as the AirRate.

Technical specifications



Inner diameter	DN100: 120 mm to xx mm DN150: 150 mm to xx mm DN200: 190 mm to xx mm (depending on customer request)
Length	150 ... 300 mm (depending on change of Cross section)
Material	Polyester Reinforced Silicone
Wall	5...6 mm
Temperature Range	-20 °C to +70 °C
Max. working pressure	1.5 bar

Scope of supply of assembly kit:

- 2 x Reduced liners
- 4 x Hose clamps